Simulation Software: Anylogic and Vensim

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Vensim Report

Vensim by Ventana Systems Incorporated is a software utilized to create and simulate system dynamics models. The software enables the user to input data and create graphs and charts the reflect the data. These charts come with slider bars, allowing the user to see in simulated real time, the effects each element has on the model.

The UI is simple, reminiscent of Lotus 123 for DOS, or an old Windows XP application. Although basic and older looking, the graphs shown are still accurate and easy to read. When a full model in constructed, the system can look plain, as one would only see boxes and arrows, along with an occasional graph. This aspect may be displeasing to some potential costumers, although the software performs as expected.

When using the software, I found no in-depth tutorials within the program, forcing me to look elsewhere. Thankfully, online resources such as YouTube provided help in operating the program. When using the program, properly setting up proper relations and equations can be confusing, allowing for errors to easily occur. Selecting which factors will be variables in the equations were also confusing, as they only register properly if the correct variable type is selected. When this error occurs, the program notifies the user that the variable is invalid, although it provides no insight into solving the issue.

The software features an easy-to-use user interface (UI), with all tools and needed selections available of the default ribbons at the top of the program. Hovering over each selection gives a line that tells what each option is, but does not tell the user what said option does. For a user learning to utilize system dynamics software, this can be off-putting, again requiring the user to seek aid elsewhere. The interface where the model is created consists of a large, white space for the user to drag and create variable boxes, relations, and more. However, these symbols are similar, being boxes, clouds, or ovals, all connected with arrows. This can be overwhelming to a new user of the software, as such similarities between icons can allow for an error to easily occur. As a user gains experience, this factor becomes negligible. All symbols and arrows appear in black or blue colors, with the occasional red or green in more advanced models. This creates a dull interface, lacking catching features and colors that other softwares may have. While this aspect does not affect performance, it may negatively impact a potential customer, both for the product, or for a company using the product to show data to client.

Vensim features four main licenses, the Vensim Professional Learning Edition (PLE), Vensim PLE+, Vensim Pro, and Vensim DSS. Vensim PLE enables the user to start using the software for free (for educational purposes) or at the cost of $53.50 for commercial usage. This is the basic version of the software, allowing basic models and simulations to be conducted. Vensim PLE+, priced at $180.83, allows the user to make more advanced models and simulations, and is described by the company as “the bridge between the inexpensive (or free) PLE and [Ventana’s] higher configurations.” New models are available in license, along with multiple views and Monte Carlo sensitivity. Vensim Pro, $1,278.65 per license, allows a user to manage large and in-depth simulations. Additionally, the software incorporates subscripting and array capabilities. Lastly, the costly Vensim DSS (priced at $2,134.65 per license) is designed for large and mode complicated models. In-depth tools allow users to make flight simulators, macros, compilers and more, in addition to the previous softwares’ capabilities and features.

Overall, for a student, a university or high school, or even a smaller corporation should opt for the standard Vensim PLE. The price is reasonable, and the software enables the user to make functioning system dynamic models along with interactive graphs and visuals.

Vensim’s Personal Learning Edition had up to date tutorials, covering the basic use of the software and mentioning the advantages of more costly editions, but never making it impossible to continue with the tutorial without a for-pay edition. It has a “look” that is dated, with the user interface seemingly designed a decade or more ago. Vensim was intended for System Dynamics Modelling but other types of modelling have been added.

Anylogic is Java based, so those familiar with Java should find it easy to use. It has a more modern look than Vensim and can import Vensim models. However, the tutorials for Anylogic are out of date as of December 2018 and some important instructions for simulations have been changed, limiting how far I was able to go in the tutorials. Specifically, the command for changing the color of an Agent was changed, so that I could not show the changes in the Agent population visually. Anylogic was designed to do Agent- based Modeling and can also do System Dynamics Modeling and Discrete Event modeling. According to the free books provided by Anylogic, it can combine elements of those three types of modelling into a single simulation.

Both Vensim and Anylogic are free for personal learning use and allow free commercial use for 90 days. Both have been used with research publications.

Costs for the 2 programs:Anylogic Researcher 4250$ (Price provided by sales representative in November 2018 and is not an official “quote”, but a preliminary figure provided so that we may budget for the software.) From the Vensim website, November 2018:
Vensim DSS 798$ +120$/year
Vensim Professional 478$+ 70year
Vensim PLE Plus 89$+10$/year$/

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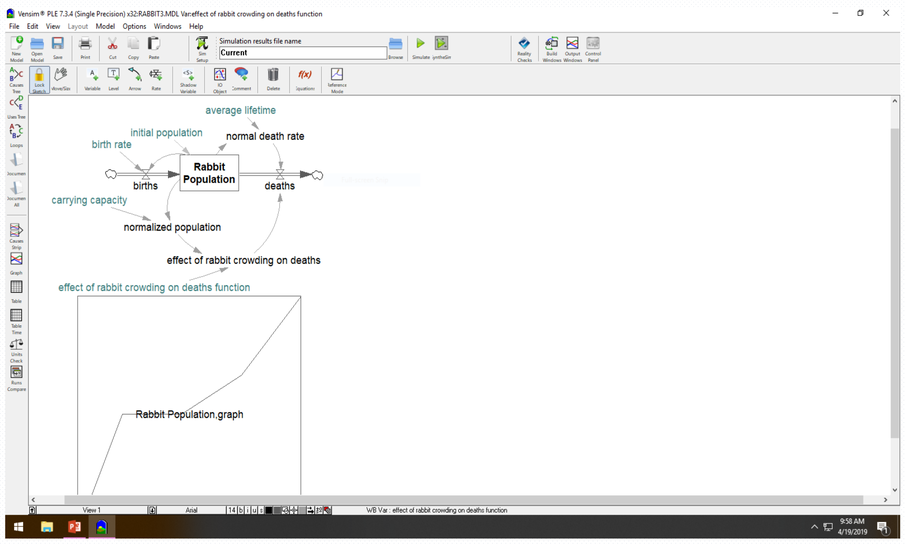

Vensim	Anylogic
Better Tutorials and Userguide	Tutorials out of date
“ look ” outdated	Java Based
	More Modern Interface
	Can combine different types of modelling into model
	Can import Vensim models
	Easily create PDF and Word reports